

# Additional Notes for Project 1

## SMTP Server

**How to Test Your Code**

# Content

- Grading
- How to Test Your Code?
  - Telnet Command
  - Mail Client: Sylpheed

# Grading

- Grading is divided into two parts:
  - Runnable 10%
  - Test cases 90%
    - Commands 60%
    - Attachment 30%

# Grading

- Runnable:
  - Project should be runnable with Python 3.

# Grading

- Test cases:
  - TAs will manually communicate with your mail server using SMTP commands by telnet.
  - TA will Use **Sylpheed** to send an email with one attachment to your mail server run in localhost
    - Sylpheed: <https://sylpheed.sraoss.jp/en/>
- Due Date:
  - **Oct. 31, 2020 at 23:59**

# How to test your code?

- Your mail server is not a real server. It doesn't forward your message to the destination email address. But just save the message in your local machine.
- Two ways:
  - Telnet command
    - For basic commands
  - Mail client (for example Sylpheed)
    - For attachments

# Telnet

- Because the port 25 is bounded with the mail service, so you need to choose a new port beyond 1024, like 1111. If on your own PC, the mail server is not enabled, you can still use port 25.
- In windows 7/10, it by default disables telnet service. You need to enable it by yourself.
- When testing your code, first run it on your localhost, like your PC.
- If you use backspace when typing commands, it will not work. You should type again.

# Telnet

- To start testing using Telnet

- Start running your server first

```
python MailServer.py
```

- Type the following command (change your port number according your configurations)

```
telnet localhost 1111
```

- Type commands (see the following 2 slides)



# Telnet

- Output at the sender side

```
Trying ::1...
telnet: connect to address ::1: Connection refused
Trying 127.0.0.1...
Connected to localhost.
Escape character is '^]'.
220 Carlos-MacBook.local Simple Mail Transfer Service Ready
HELO gmail.com
250 Carlos-MacBook.local greets localhost
MAIL FROM: <bob@gmail.com>
250 Sender <bob@gmail.com> ...OK
RCPT TO: <zhanhu@cse.ust.jk>
550 Requested action not taken: mailbox unavailable
RCPT TO: <zhanhu@cse.ust.hk>
550 Requested action not taken: mailbox unavailable
d
500 Command unrecognized: "d"
RCPT TO: <zhuhanhu@cs.ust.hk>
250 Receipant <zhuhanhu@cs.ust.hk> ...OK
DATA
354 Start mail input; end with <CRLF>.<CRLF>
Hi,
How are you?
Best,
Zhan
.
250 Message was saved
quit
500 Command unrecognized: "quit"
QUIT
221 Carlos-MacBook.local Service closing transmission channel
```

May fail due to backspace

Type this dot to end the email content

# Telnet

- Output at the email server

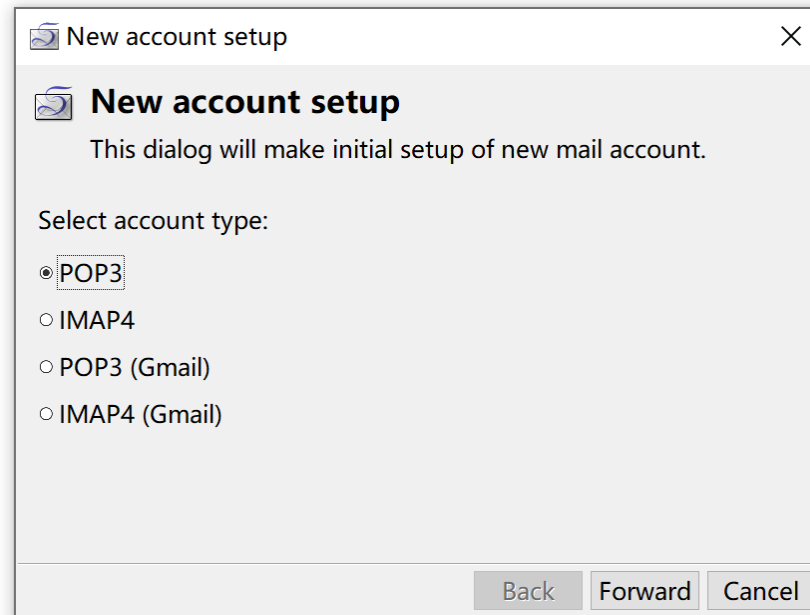
```
waiting for connection...
...connected from: ('127.0.0.1', 64663)
waiting for connection...
localhost: Carlos-MacBook.local
remoteHost: localhost
220 Carlos-MacBook.local Simple Mail Transfer Service Ready
250 Carlos-MacBook.local greets localhost
250 Sender <bob@gmail.com> ...OK
550 Requested action not taken: mailbox unavailable
Stage 3: RCPT TO: <zhanhu@cse.ust.jk>
550 Requested action not taken: mailbox unavailable
Stage 3: RCPT TO: <zhanhu@cse.ust.hk>
500 Command unrecognized: "d
"
250 Receipant <zhanhu@cs.ust.hk> ...OK
354 Start mail input; end with <CRLF>.<CRLF>
Hi,
How are you?
Best,
Zhan
250 Message was saved
Stage 4: DATA
500 Command unrecognized: "quit"
Stage 2: quit
Stage 2: QUIT
221 Carlos-MacBook.local Service closing transmission channel
```

# Mail Client

- Mail client
  - For attachments
  - You can use other email clients too
    - Outlook 365/2016 may not be suitable.
  - Set the SMTP server to be “localhost”
  - Set the SMTP port number to be your own port number chosen in your code like 1111.
  - Suggested: Sylpheed. Available at <https://sylpheed.sraoss.jp/en/>

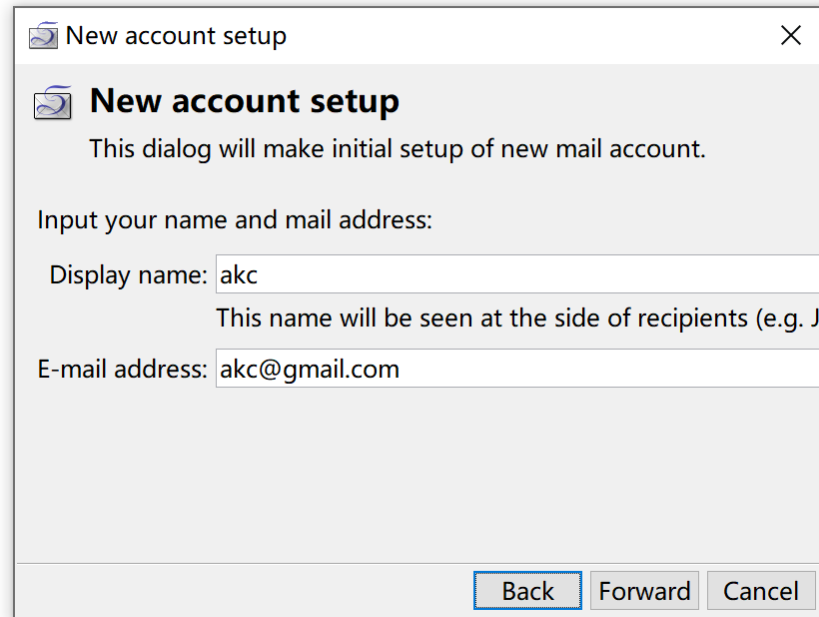
# Mail Client: Set Up *Sylpheed*

- You are recommended to use the Windows version
- After installation, choose POP3 account



# Mail Client: Set Up *Sylpheed*

- Email address can be arbitrary, even if it does not exist



The screenshot shows a 'New account setup' dialog box. It has a title bar with a close button. Inside, there's a header section with a Sylpheed icon and the title 'New account setup'. Below this, a message states: 'This dialog will make initial setup of new mail account.' The main area is labeled 'Input your name and mail address:'. It contains two text input fields. The first is labeled 'Display name:' and contains the text 'akc'. Below this field, a hint text says 'This name will be seen at the side of recipients (e.g. J...'. The second field is labeled 'E-mail address:' and contains the text 'akc@gmail.com'. At the bottom right, there are three buttons: 'Back', 'Forward', and 'Cancel'.

New account setup

**New account setup**

This dialog will make initial setup of new mail account.

Input your name and mail address:

Display name: akc

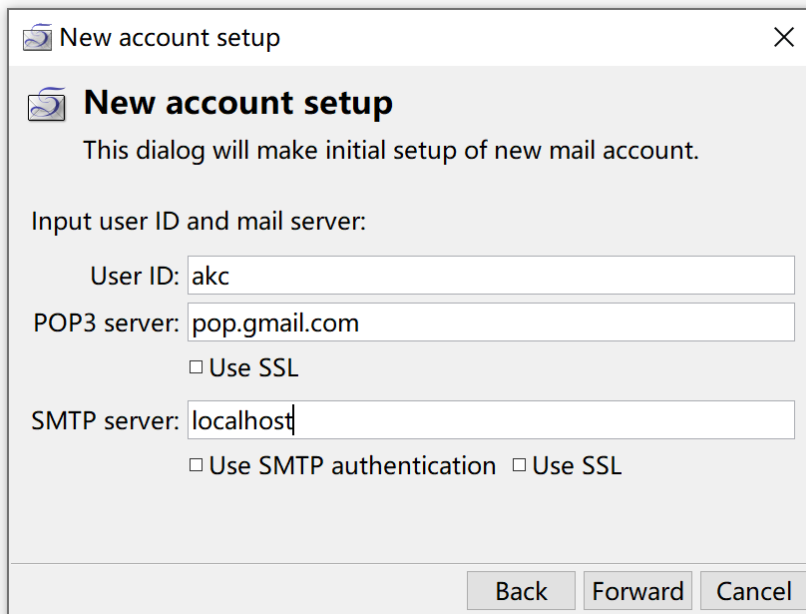
This name will be seen at the side of recipients (e.g. J...

E-mail address: akc@gmail.com

Back Forward Cancel

# Mail Client: Set Up *Sylpheed*

- Remember to configure SMTP server address as *localhost*



New account setup

**New account setup**  
This dialog will make initial setup of new mail account.

Input user ID and mail server:

User ID:

POP3 server:

☐ Use SSL

SMTP server:

☐ Use SMTP authentication ☐ Use SSL

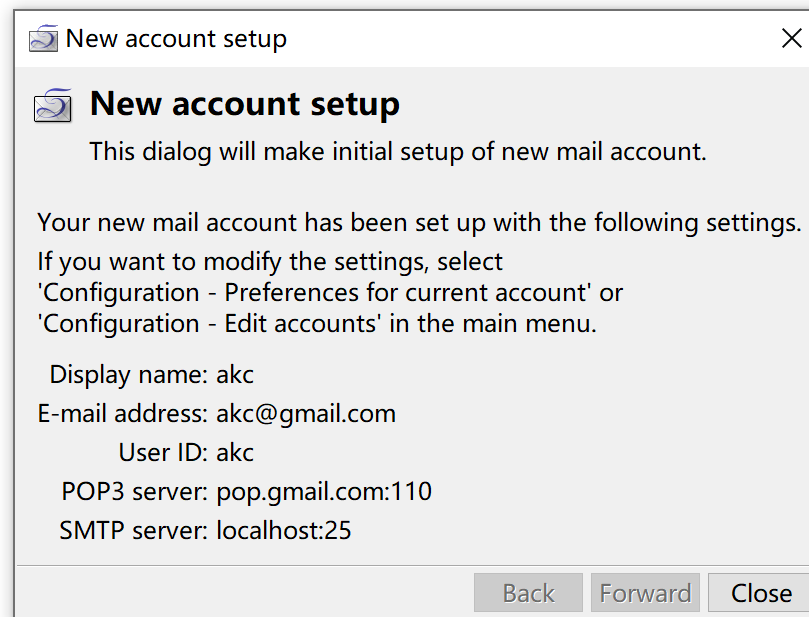
Back Forward Cancel

You can find the pop3 server on the internet

**! Please set the server to localhost**

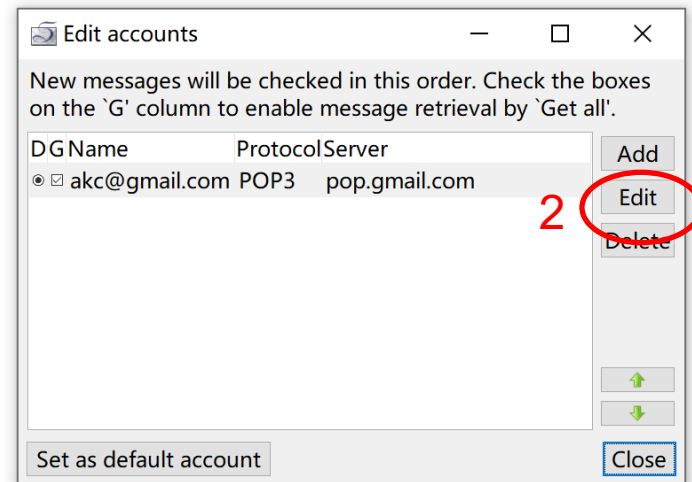
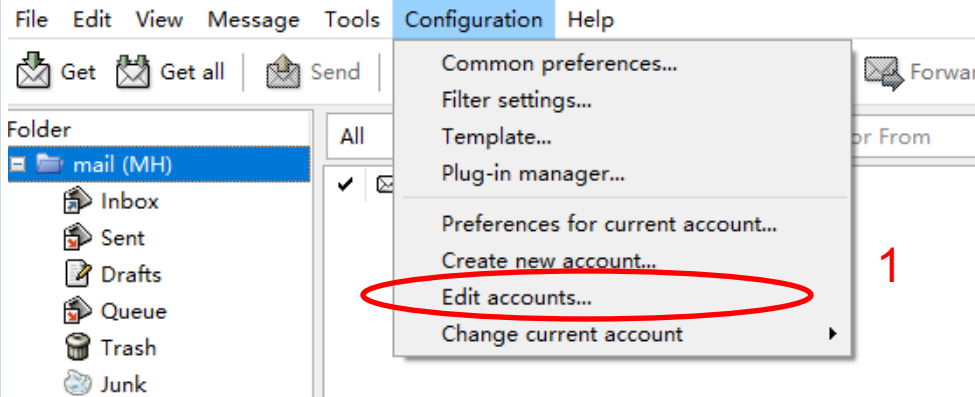
# Mail Client: Set Up *Sylpheed*

- Check and click on “Close” to finish configuring email account



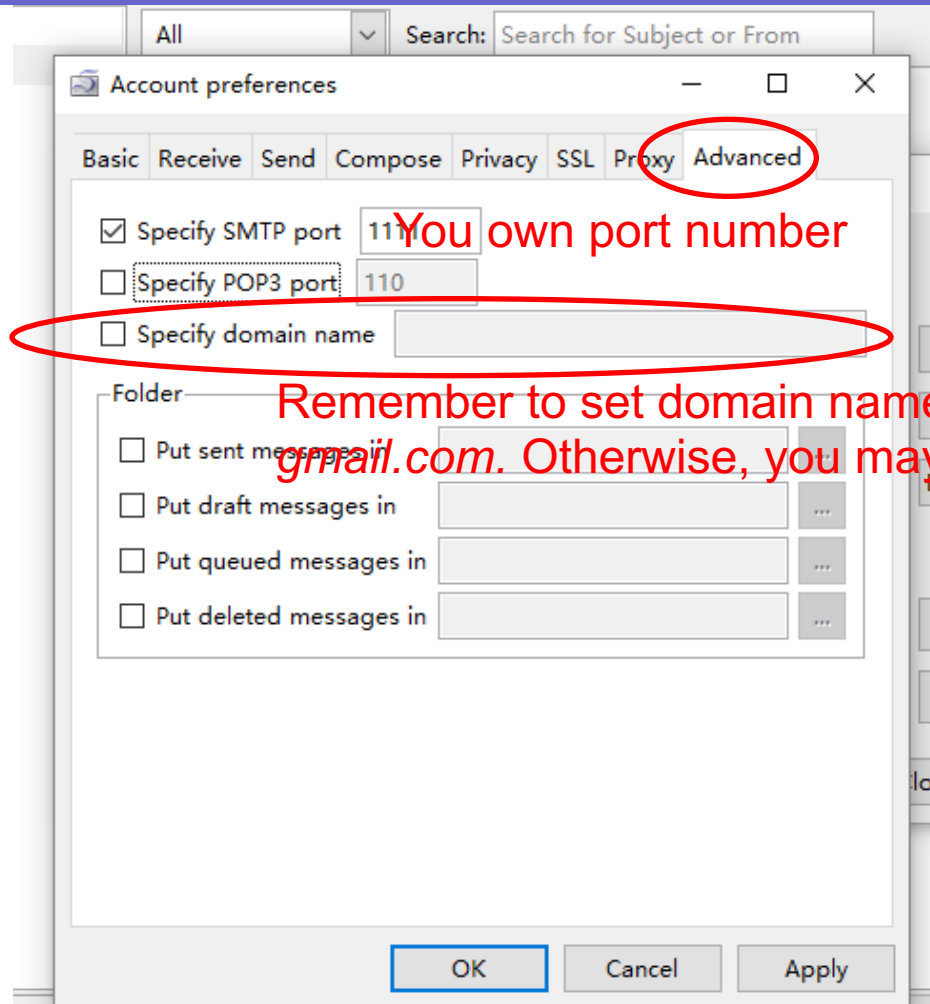
# Mail Client: Set Up *Sylpheed*

- Now please go to *Configuration* to change the port # and domain name





# Mail Client: Set Up *Sylpheed*

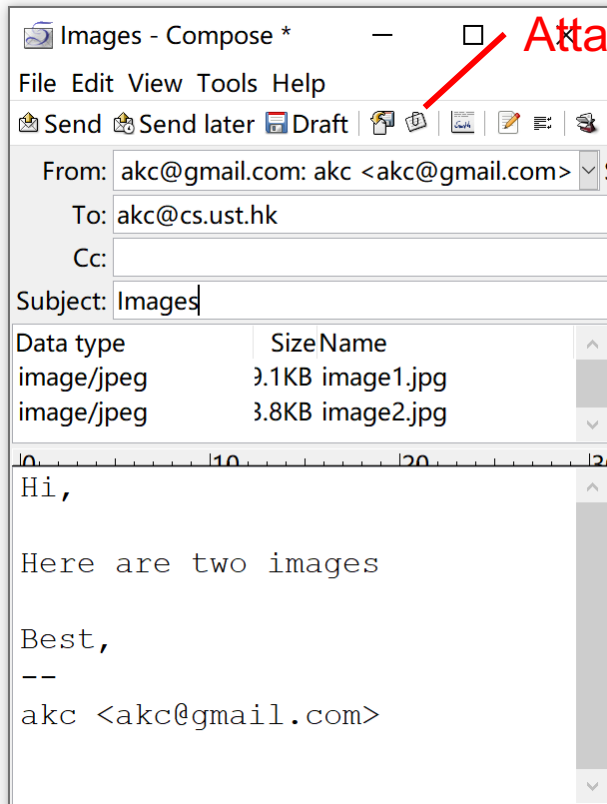


You own port number

Remember to set domain name such as *gmail.com*. Otherwise, you may receive error 501

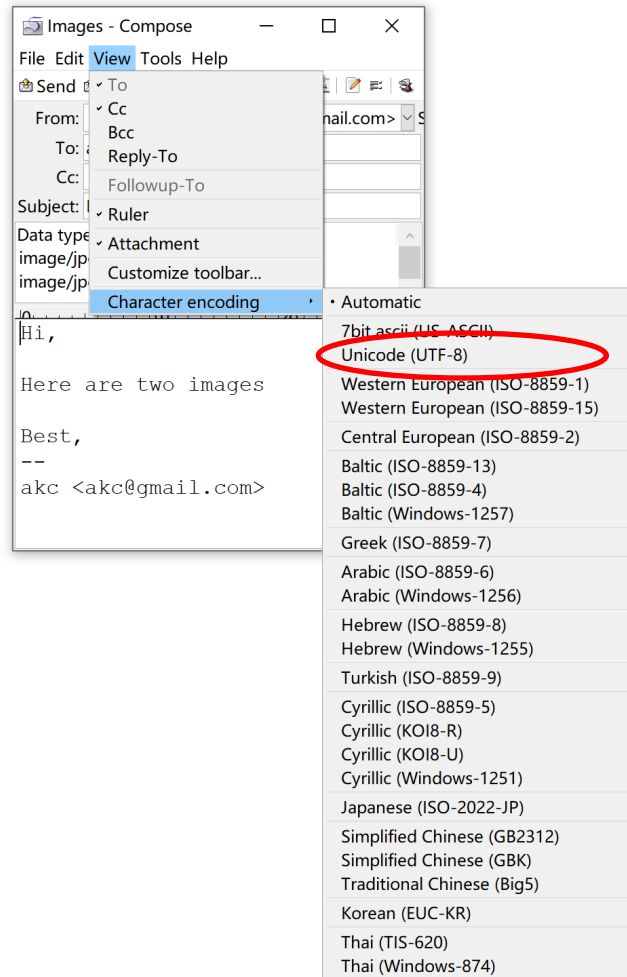
# Mail Client: Send Email

- We compose an email with attachments



We attach two images here  
as an example

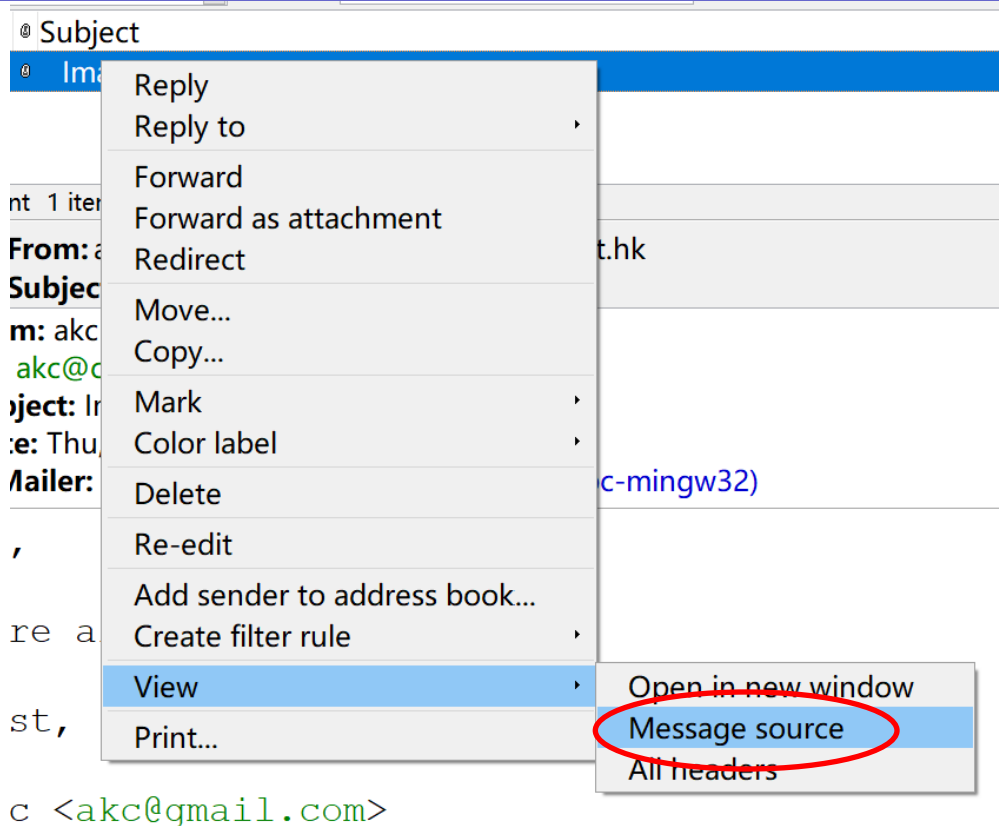
# Mail Client: Send Email



To avoid encoding error, you need to set the message as UTF-8 encoding.

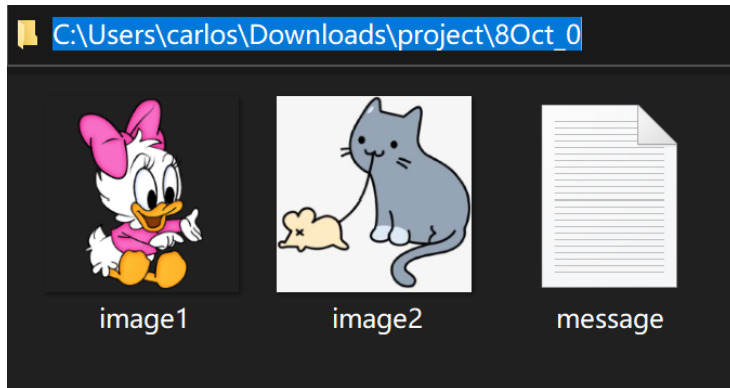
You need to perform this step if you are using this software in some non-English languages.

# Mail Client: Send Email



We can also check the message source in *Sylpheed*. It helps you to debug the code. Please check the attribute struct carefully.

# Mail Server: Received Files



Files generated at  
the server side

```
From: <hcy@gmail.com>
To: <hcy@cs.ust.hk>
Date: Sun, 29 Oct 2017 13:44:05 +0800
From: hcy <hcy@gmail.com>
To: hcy@cs.ust.hk
Subject: hi
Mime-Version: 1.0
Content-Type: multipart/mixed;
  boundary="Multipart=_Sun_29_Oct_2017_13_44_05_+0800_pP1tYNVCZUzP+GMyy"
-----
Content-Type: text/plain; charset=US-ASCII
Content-Transfer-Encoding: 7bit

hi
123

--
hcy <hcy@gmail.com>

Content-Type: image/jpeg;
  name="1.jpg"
Content-Transfer-Encoding: base64

Content-Type: image/jpeg;
  name="2.jpg"
Content-Transfer-Encoding: base64

-----
File(s) of Attachment :
1. jpg
2. jpg
```

Message.txt

Our program will generate the message.txt and extract the attachments. In this example, the code extracts two images.

Note that your output might not be the same as this example. It is OK if the core part was finished.

# Mail Server: Output

```
(base) PS C:\Users\carlos\Downloads\project> python MailServer.py
waiting for connection...
...connected from: ('127.0.0.1', 50702)
waiting for connection...
localhost: DESKTOP-KOVPEDU
remoteHost: DESKTOP-KOVPEDU
220 DESKTOP-KOVPEDU Simple Mail Transfer Service Ready
250 DESKTOP-KOVPEDU greets DESKTOP-KOVPEDU
250 Sender <akc@gmail.com> ...OK
250 Receipant <akc@cs.ust.hk> ...OK
354 Start mail input; end with <CRLF>.<CRLF>
Date: Thu, 8 Oct 2020 11:51:25 +0800
From: akc <akc@gmail.com>
To: akc@cs.ust.hk
Subject: Images
Message-Id: <20201008115125.716dfcd7c4c01b8d96f36926@gmail.com>
X-Mailer: Sylpheed 3.7.0 (GTK+ 2.24.30; i686-pc-mingw32)
Mime-Version: 1.0
Content-Type: multipart/mixed;
  boundary="Multipart=_Thu_8_Oct_2020_11_51_25_+0800_0cYqkx40VN0yPMvf"

This is a multi-part message in MIME format.

--Multipart=_Thu_8_Oct_2020_11_51_25_+0800_0cYqkx40VN0yPMvf
Content-Type: text/plain; charset=US-ASCII
Content-Transfer-Encoding: 7bit

Hi,

Here are two images

Best,
--
akc <akc@gmail.com>

--Multipart=_Thu_8_Oct_2020_11_51_25_+0800_0cYqkx40VN0yPMvf
Content-Type: image/jpeg;
  name="image1.jpg"
Content-Disposition: attachment;
  filename="image1.jpg"
Content-Transfer-Encoding: base64
```

```
iVBORw0KGgoAAAANSUHEUgAAAlgAAAJYCAyAAAC+ZpjCAAAABHNCSVQICAgIfAhkiaAAAIABJREFU
eJzsnXmcZFV597/Pc25V9/TMMAw7iuxuiIgbaIwoKCBu0cQtGtcYfOVVNK5R8wa3aExcYlwYT
kxj3Fx0jJuZ1T1zQuK0iB1QQZTeZ7qp7zvP+ce6599zq6mEGunu64Xw/nztd99Z261ZN3V89y++B
QqFQKBQKhUKhUCgUCoVCoVa0FAqFQqFQKBQKhUKhUCgUCoVCoVa0FAqFQqFQKBQKhUKhUCgUCoVC
```

...(We omit the long attachments' encodings here)..

```
gICD4rxZrRkNtqLNfrXSXGgq2G0elq4WyxStPiHMcCCPmghhrZ2TXDrqVNPd8Dkr9P7pMS4tt+09
CXe908/D8m0aPZBDrPex54kce1kfHv/xbK6YblvLV0o5yPL4JRy7/wA6DU9f2b/Gdb5zTyaLVsxH
7UFfSyTP1bKQg+yx9mZxm3uUMGk32Bu+xkrppSxNH07wn8gg3dpR2Nerd4uUFRrBnFkx21tCHU9
re6tq5G+bWkhsbD77u29Cgs+0S0I0z4e8LgwXTHHo7dQx7PqJnfHUVku2xlmk8XuP5DwAA6INgoC
AgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgIC
AgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgIC
AgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgIC
AgICAgICAgICAgICAgICD//Z
```

```
--Multipart=_Thu_8_Oct_2020_11_51_25_+0800_0cYqkx40VN0yPMvf--
here2 text/plain
here2 charset=US-ASCII
here2 Content-Type: image/jpeg
here2
here2 name="image1.jpg"
filename=image1.jpg
here2 image/jpeg
here2
here2 name="image2.jpg"
filename=image2.jpg
multipart and mime=True True
attachment=image1.jpg
image2.jpg
```

```
250 Message was saved
Stage 4: DATA
Stage 2: QUIT
221 DESKTOP-KOVPEDU Service closing transmission channel
```

Here are the mail server's output. You can choose to disable printing this much information. But it can help your debugging process.